Claims 1-14 and 16-30

Claims 1-14 and 16-30 stand rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 6,680,928 to Dent. Each of the claims contains a limitation requiring certain actions to happen "in response to a single instruction." When referring to Dent, the Examiner states in the Final Office Action that "The input signal is the single instruction" and cites Fig. 8 of Dent. Applicant believes the Examiner is misunderstanding the term "instruction" as understood in the art and used in the Application and claims.

An "instruction," as used in the art and in this Application means a "construct that specifies or causes an operation to be performed and identifies its operands." This meaning of "instruction" is consistent with how the term is generally defined in technical dictionaries related to the art.

The *IBM Dictionary of Computing* (1987) [copy attached] defines "instruction" as:

> *instruction* *1. In a machine language or an assembly language, a language construct that specifies an operation and identifies its operands.*[1]
>
> *2. A statement that specifies an operation to be performed by a system and that identifies data involved in the operation.*
>
> *3. A statement that specifies an operation to be performed by the computer and the locations in storage of all data involved in that operation.*

Similarly, the *Illustrated Dictionary of Electronics* (1991) [copy attached] defines "instruction: as:

> *instruction* *In digital computer practice, a set of bits defining an operation and consisting of (1) an[] operation code specifying the operation to be performed; (2) one or more operands or their addresses; and (3) one or more modifiers, or their addresses, to modify the operand or its address.*

[1] Applicant does not intend "instruction" in the claims to be limited to machine language or assembly language.

The input signal of Dent cited by the Examiner is not a statement or construct that specifies or causes an operation to be performed. Rather, the signal of Dent is a data signal containing data to be processed and does not specify or cause on operation to be performed. Therefore it is not an instruction as defined above and used in the Application. Indeed Dent does not teach, disclose or suggest performing the operations of the claims in response to a single instruction. It is submitted that one of skill in the art would not consider a signal to be the same or even remotely similar to an instruction as claimed.

Furthermore, each of the above claims require certain operations to happen within a single clock cycle of a digital signal processor. When referring to Dent, the Examiner states in the Final Office Action that "One symbol period equals one symbol clock cycle." First, the claims do not recite a "symbol clock cycle" but rather a "single clock cycle of the digital signal processor." The two are not the same. Second, the symbol period of Dent relates to the portion of a signal that is coded for each set of symbols or "chips." (See col. 2, lines 14-14). The symbol period of Dent has no relation to the single clock cycle of the digital signal processor. Indeed, each symbol period is normally multiple clock cycles. Nowhere does Dent teach, disclose or suggest performing certain operations within a single clock cycle of the digital signal processor, let alone those required by the claim.

Claims 27-30

Claims 27-30 stand rejected under 35 U.S.C. §102 as being anticipated by U.S. Patent No. 6,366,607 to Özlütürk. As above with the Dent reference, the Examiner states that "the input signal is the single instruction." Applicant contends, as above, that an instruction must specify or cause an operation to be performed and that the input signal of Özlütürk cited by the Examiner is a simple

data signal that is not an instruction as the term "instruction" is used in the art and in the Application. Indeed Özlütürk does not teach, disclose or suggest performing the operations of the claims in response to a single instruction.

Furthermore the Examiner states that "Claims 27-30 claim only the complex multiplication is carried out in a single clock cycle." Claim 28 (and therefore dependent claims 29 and 30) claim that both complex multiplication and complex addition as specified in the claim occur in response to the single instruction which is executed within a single clock cycle of a digital signal processor. In any event, Özlütürk does not teach, disclose or suggest performing any operations within a single clock cycle of a digital, let alone the complex multiplication and / or addition required by claims 27-30.

For the above reasons, claims 1-14 and 16-30 are allowable over the art of record, and withdrawal of the rejections is respectfully requested.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Dated: February 17, 2006

Respectfully submitted,

By_____

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Docket No. A0312.70412US00
x02/17/06x

IBM

Dictionary of Computing

Information Processing,
Personal Computing,
Telecommunications,
Office Systems,
IBM-sp ·fic Terms

inserted mode In an 8100 loop, a secondary station operating mode in which the secondary station monitors loop traffic and regenerates the loop signals it receives before placing them back on the loop. See also monitor mode.

insertion characters Characters that are inserted in the value of a field when it is displayed or printed, in order to make the value easier to read.

insertion sort A sort in which each item in a set is inserted into its proper position in the sorted set according to specified criteria. (A)

insert mode In System/36, the work station utility mode during which operators can insert records in the transaction file.

install In SMP and SMP/E, to incorporate a system modification (SYSMOD) into the target system libraries or to accept a SYSMOD into the distribution libraries.

installation *1.* In system development, preparing and placing a functional unit in position for use. (T) *2.* A particular computing system, including the work it does and the people who manage it, operate it, apply it to problems, service it, and use the results it produces. *3.* See task set installation.

installation diskette An IBM-supplied diskette that contains a system or part of a system and that usually contains other data needed for installation purposes.

installation exit routine In ACF/VTAM, a user-written exit routine that can perform functions related to initiation and termination of sessions and that is run as part of ACF/VTAM rather than as part of an application program. Examples are accounting, authorization, logon-interpret, and virtual route selection exit routines. Contrast with application program exit routine.

installation news In SDF/CICS, a set of tutorial topics that can be defined by installations and are selectable from the NEWS topic. This topic is accessible from the initial function selection or with the NEWS tutorial commands.

installation performance specification (IPS) In MVS, a set of installation-supplied control information used by the system workload manager. An IPS includes performance group definitions, performance objectives, and coefficients used to establish the service rate. See also service rate.

installation profile See profile.

installation time Time spent in installing and testing hardware or software. (A)

installation verification procedure (IVP) A procedure distributed with the VM system that tests the newly generated VM system to verify that the basic facilities of VM are functioning correctly.

instantaneous sound pressure In acoustics, the difference between the sound pressure that exists at a point in a medium at a particular instant and the static pressure. See also effective sound pressure, static pressure.

in-stream procedure A set of job control statements placed in the input stream that can be used any number of times during a job by naming the procedure in an execute (EXEC) statement.

instruction *1.* In a machine language or an assembly language, a language construction that specifies an operation and identifies its operands, if any. (T) *2.* A statement that specifies an operation to be performed by a system and that identifies data involved in the operation. *3.* A statement that specifies an operation to be performed by the computer and the locations in storage of all data involved in that operation. *4.* See absolute instruction, actual instruction, arithmetic instruction, branch instruction, breakpoint instruction, computer instruction, conditional-branch instruction, conditional control transfer instruction, conditional jump instruction, conditional transfer instruction, control transfer instruction, decision instruction, direct instruction, discrimination instruction, dummy instruction, effective instruction, extract instruction, immediate instruction, indirect instruction, I/O-privileged instruction, jump instruction, logic instruction, macroinstruction, microinstruction, multiaddress instruction, n-address instruction, no-operation instruction, n-plus-one address instruction, one-address instruction, one-plus-one address instruction, optional-pause instruction, pause instruction, presumptive instruction, privileged instruction, repetition instruction, restart instruction, stop instruction, supervisor-privileged instruction, test instruction, three-address instruction, three-plus-one address instruction, two-address instruction, two-plus-one address instruction, unconditional-jump instruction, zero-address instruction. *5.* Synonymous with imperative statement.
Note: Macroinstructions are included as a subset of an assembly language.

instruction address *1.* The address of an instruction word. (I) (A) *2.* The address that must be used to fetch an instruction. (A) *3.* Contrast with address part.

instruction address register (IAR) *1.* A register from whose contents the address of the next instruction is derived. (I) (A) *2.* A register in a process-

The Illustrated Dictionary of Electronics

Fifth Edition

Rufus P. Turner
Stan Gibilisco

McGraw-Hill, Inc.

New York St. Louis San Francisco Auckland Bogotá Caracas
Lisbon London Madrid Mexico City Milan Montreal New Delhi
Paris San Juan São Paulo Singapore Sydney Tokyo Toronto

instantaneous automatic gain control Abbreviation, IAGC. An automatic gain control whose operation almost immediately follows a change in signal amplitude.

instantaneous automatic volume control Abbreviation, IAVC. An instantaneous automatic gain control system for the immediate control of volume in receivers and AF amplifiers.

instantaneous companding A form of companding that operates according to the instantaneous amplitude of the input signal.

instantaneous contacts Timer contacts that open or close almost immediately upon application of the control signal.

instantaneous current Symbol, i or I_i. The value of an alternating current at a particular instant in the cycle. For a sine wave, $I_i = I_m \sin \Omega t$, where I_m is the maximum current (in the units for I_i) and t is time (seconds).

instantaneous disk A phonograph disk that can be played back immediately after being recorded.

instantaneous frequency The frequency of a signal at a particular moment in time. The instantaneous frequency changes in frequency-modulated or phase-modulated signals.

instantaneously companded delta-sigma modulation A method of modulation essentially identical to high-information delta modulation (HIDM).

instantaneous power In an amplitude-modulated wave, the power at any instant in the modulation cycle. In a fully modulated (100%) AM wave the instantaneous power varies between zero and four times the unmodulated carrier power.

instantaneous power output The rate of power delivery to a load at a given instant.

instantaneous relay A relay, such as a fully electronic type (having no moving parts), which shows virtually no delay in its operation.

instantaneous sample A measurement obtained by instantaneous sampling.

instantaneous sampling Measuring the amplitude of a wave at a given instant. See, for example, INSTANTANEOUS CURRENT and INSTANTANEOUS VOLTAGE.

instantaneous speech power In the output of an audio amplifier, the instantaneous value of power in a speech wave, as opposed to that in a sine wave. *Also see* INSTANTANEOUS VALUE and SPEECH POWER, 1.

instantaneous value The magnitude of a value that varies at a selected instant. See, for example, INSTANTANEOUS CURRENT, INSTANTANEOUS POWER, INSTANTANEOUS SPEECH POWER, and INSTANTANEOUS VOLTAGE. *Compare* AVERAGE VALUE, and EFFECTIVE VALUE.

instantaneous voltage Symbol, E_i. The value of an ac voltage at a particular instant in the cycle. For a sine wave, $E_i = E_m \sin \Omega t$; where E_m is the maximum voltage (in the units for E_i) and t is time (seconds).

instruction In digital computer practice, a set of bits defining an operation and consisting of (1) and operation code specifying the operation to be performed; (2) one or more operands or their addresses; and (3) one or more modifiers, or their addresses, to modify the operand or its address.

instruction address In a computer memory, the address of a location containing an instruction.

instruction address register As a part of a program controller, a register that holds instruction addresses that the retrieval of the instructions from memory can be controlled during a program run; program counter.

instruction code The symbols and characters that comprise the syntax of a computer programming language. Also called INSTRUCTION SET, *order code, machine code, operation code, function code.*

instruction format In a computer's basic machine code, the part that specifies how characters or digits are used to represent the codes within the machine's instruction set.

instruction modification In a computer instruction, a change in the instruction code that makes the computer do a different operation when the routine containing the code is encountered again.

instruction register A register in a computer containing the address of the current instruction. Also called CONTROL REGISTER (abbreviation, CR).

instruction set The range of commands that form a programming language.

instruction storage A memory circuit that stores computer instructions or programs.

instruction time The time it takes a control unit to analyze and implement a computer program instruction.

instruction word In digital computer programming, a word containing (1) the instruction code (type of operation to be performed) and (2) the address part (location of the associated data in storage).

instrument A device for measuring electrical quantities or the performance of electronic equipment. Some, meters, give direct indications; others, such as bridges, must be adjusted, the measured quantities being determined from one or more adjustments (sometimes augmented with calculations).

instrumental error *See* INSTRUMENT ERROR.

instrument amplifier A high-gain wideband amplifier that increases the sensitivity of an instrument, such as an oscilloscope, meter, or graphic recorder.

instrument-approach system *See* INSTRUMENT LANDING SYSTEM.

instrumentation Planning and providing instruments and instrument systems for the collection and, sometimes, storage and analysis of data.

instrumentation amplifier A form of integrated-circuit voltage amplifier designed for high linearity, high input impedance, and high common-mode rejection. It is intended for use with electronic instruments.

instrument chopper A refined chopper for converting a dc signal to ac for an ac instrument, such as a voltmeter or recorder.

instrument error Discrepancy in measured quantities due to inaccuracy of the instrument used, insertion resistance, and so on.

instrument flight Blind aircraft flight, i.e., flight guided by